

PATENT COOPERATION TREATY

REC'D 04 FEB 2005

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From the
INTERNATIONAL SEARCHING AUTHORITY

To:

see form PCT/ISA/220

PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/GB2004/050022

International filing date (day/month/year)
28.10.2004

Priority date (day/month/year)
12.11.2003

International Patent Classification (IPC) or both national classification and IPC
H01L21/20, C30B25/04

Applicant
UNIVERSITY OF WARWICK

This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



European Patent Office
D-80298 Munich
Tel. +49 89 2399 - 0 Tx: 523656 epmu d
Fax: +49 89 2399 - 4465

Authorized Officer

Wolff, G

Telephone No. +49 89 2399-2578



**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/GB2004/050022

Box No. I Basis of the opinion

With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).

☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material:

☐ a sequence listing

☐ table(s) related to the sequence listing

b. format of material:

☐ in written format

☐ in computer readable form

c. time of filing/furnishing:

☐ contained in the international application as filed.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/GB2004/050022

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1 Statement

| | | |
|-------------------------------|-------------|------|
| Novelty (N) | Yes: Claims | 1-17 |
| | No: Claims | |
| Inventive step (IS) | Yes: Claims | 1-17 |
| | No: Claims | |
| Industrial applicability (IA) | Yes: Claims | 1-17 |
| | No: Claims | |

2 Citations and explanations

see separate sheet

Box No. VI Certain documents cited

1 Certain published documents (Rules 43bis.1 and 70.10)

and/or

2 Non-written disclosures (Rules 43bis.1 and 70.9)

see form 210

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Re Item V.

- 1 The following documents are referred to in this communication:

D1: WO-A-03/054937
D2: WO-A-02/064864
D3: US 2003/183827 A1
D4: US 2003/139037 A1

- 2 None of the cited documents discloses a method of forming a layer on a substrate in which an isolating layer is formed having a window and a depression in the vicinity of the window, and in which a semiconductor layer is grown by selective epitaxy from the window into the depression to completely fill the depression (cf. item VIII). This is also not rendered obvious by these documents.

Thus, the subject-matter of claim 1 is considered to meet the requirements of Article 33 PCT.

- 3 Claims 2-17 are dependent on claim 1 and as such also meet the requirements of the PCT with respect to novelty and inventive step.

Re Item VI.

EP-A-1 363 318
EP-A-1 367 150

Re Item VIII.

The subject-matter of claim 1 is ambiguous and therefore not clear (Article 6 PCT) with regard to the growth of semiconductor material in the depression. Claim 1 specifies only that the semiconductor material should extend into the depression but does not specify that the depression should be completely filled as apparent from the description.

The respective clarification is also necessary to clearly distinguish the subject-matter of claim 1 over the prior art, see e.g. D4, figure 7.